To: FCC
Re: FCC Streamlining Deployment of 5G. Docket 16-421

Date: Feb 6, 2017

Dear FCC Members:
As a physician and member of the public involved in the public health aspects of wireless technology I am writing to strongly encourage you to halt the expedited roll out of 5G and instead invite an independent scientific body to evaluate the long term adverse health effects of this new higher frequency technology along with the already deployed lower frequency microwave radiation that surrounds us. In forcing this upon cities you are disrespecting the democratic process. You are also circumventing important safety considerations for all of us including your families.

While there are some potentially valuable uses for this technology and it is rather enticing to have rapid streaming of movies everywhere, there remain many unanswered questions about health and safety as well as privacy and security of this technology. Current safety standards for microwave EMF radiation are outdated and inadequate to protect public health. They are based on thermal heating and do not take into account an enlarging body of scientific evidence along with observation, that points to biologic harm to humans, insects, plants and bacteria from wireless radiation. It is not clear what the safety standards will be for 5G technology.

Radiating the total environment by adding another layer of high frequencies without proper long term safety testing and without input from scientists and health practitioners shows a lack of understanding of physiology, disregard for basic public health policy and denial of the reality that this technology has the potential to harm the very consumers you hope to attract.

Science has shown us that low power microwave radiation from our current 2G,3G, 4G and Wi-Fi wireless devices has non-thermal adverse impacts on cellular biology with much more complex mechanisms than technology can boast. Microwave radiation is considered to be the fourth largest source of pollution after air, water and noise as it induces many biological effects. (1) Oxidation is increased, cell membranes are disrupted, mitochondria are effected, sperm are damaged, DNA is altered, regulation mechanisms are decommissioned.
With regards to serious effects on our brain tissue from microwave frequencies we are commonly exposed to, researchers in 2015 conclude “Research from our group

and from others has demonstrated that microwave radiation damages hippocampal structures in rats, impairs long-term potentiation, decreases neurotransmitter concentrations, reduces synaptic vesicles in number and results in memory impairment. Thus, the brain is generally accepted as the most sensitive target organ for MW radiation." (1).

5G DEPLOYMENT

Your promise to consumers and businesses… "The ubiquitous connection of smart digital devices, particularly machine-to-machine connections such as sensors, wireless utility meters, industrial systems, home automation devices and appliances, connected cars, consumer electronics, and smart medical devices, , and immersive entertainment (greatly enhanced resolution and virtual reality)." …….And while the Commission "has repeatedly recognized the extraordinarily promising benefits of such 5G services and has acknowledged the need for deployment of small wireless facilities…." it has failed to acknowledge older studies pointing to non-thermal effects of 5G millimeter technology and failed to provide updated transparent and independent studies regarding short or long term adverse effects on humans and the environment before setting in motion another large involuntary experiment on the population. Environmental effects on trees, bees, birds and other wildlife necessary to a sustainable human existence are not being considered.

A brief survey of some of the research states that 5G millimeter wavelengths don't penetrate deeply in the skin but do have the potential to cause pathology on dermal structures as well as cataracts and other ocular abnormalities as these are the target organ systems. There is in addition some research that points to millimeter wavelengths affecting the whole biology of an organism by mechanisms not fully understood but possibly due to neural epidermal junctions that send signals that travel through the nervous system of the body. (8-18)

This rapid deployment of 5G wavelengths may serve the needs of businesses but I have not heard convincing arguments that this is an emergency situation. I believe the public would rather have safety testing prior to deployment. The public may also like to have a greater part in the discussions as their health and wellbeing are at stake.

Respectfully submitted,
Cindy Russell, MD

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